

REMARKS

Reconsideration and allowance are requested. Claims 1 – 32 are rejected and no claims are amended.

Rejection of Claims 1-4, 13, 15, 18-19, 21-24, 27 and 29 Under Section 102(e)

The Examiner rejects claims 1-4, 13, 15, 18-19, 21-24, 27 and 29 under Section 102(e) as being anticipated by U.S. Patent No. 6,418,411 to Gong (“Gong”). Applicants do not acquiesce to this claim rejection. However, at this time, Applicants do not provide arguments regarding the patentability of these claims. Applicants note that they are willing to amend the claims in this application in view of allowance of claims given the arguments below.

Rejection of Claims 5, 6, and 25 Under Section 103(a)

The Examiner rejects claims 5, 6 and 25 under Section 103(a) as being unpatentable over Gong in view Kanevsky et al. (USP 6,442,519) (“Kanevsky”). Applicants traverse this rejection and submit that there is insufficient motivation or suggestion to combine these references under a proper Section 103 obviousness analysis.

The basic components of the following analysis will be applied in each Section 103 rejection in the Office Action. The main argument is that Gong provides no suggestion or motivation to combine its teachings with the various patents being combined with Gong to reject claims. Applicants respectfully submit that the Examiner’s analysis in each case is incomplete to establish a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, the Examiner must meet three criteria. First, there must be some motivation or suggestion, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to combine the references. Second, there must be a reasonable expectation of success, and finally, the prior art references must teach or suggest all the claim limitations. The Examiner bears the initial

burden of providing some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." MPEP 2142.

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Furthermore, if the examiner determines there is factual support for rejecting the claimed invention under 35 U.S.C. 103, the examiner must then consider any evidence supporting the patentability of the claimed invention, such as any evidence in the specification or any other evidence submitted by the applicant. The ultimate determination of patentability is based on the entire record, by a preponderance of evidence, with due consideration to the persuasiveness of any arguments and any secondary evidence. *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The legal standard of "a preponderance of evidence" requires the evidence to be more convincing than the evidence which is offered in opposition to it. With regard to rejections under 35 U.S.C. 103, the examiner must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teachings establish a *prima facie* case of obviousness) is more probable than not. MPEP 2142.

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts. Where the teachings of two or more prior art references conflict, the examiner must weigh the power of each reference to suggest solutions to one of ordinary skill in the art, considering the degree to which one reference

might accurately discredit another. *In re Young*, 927 F.2d 588, 18 USPQ2d 1089 (Fed. Cir. 1991). MPEP 2143.01.

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). See also *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992) (flexible landscape edging device which is conformable to a ground surface of varying slope not suggested by combination of prior art references). MPEP 2143.01. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). See also *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1318 (Fed. Cir. 2000). MPEP 2143.01.

With respect to claims 5, 6 and 25, Applicants submit that by a preponderance of the evidence, one of skill in the art would not have sufficient motivation to combine Gong with Kanevsky. Gong, in its Background Section of col. 1, sets forth the problem Gong seeks to fix: "The use of cellular phones in a [sic] automobile or truck has grown rapidly over the recent few years.... Hands-free speech recognition in automobile is always performed under mismatch condition." The Background Section makes clear that the context and scope of the Gong invention is for hands-free speech recognition in an automobile. Gong explains that in a hand-free mode, the driver keeps his or her hands on the wheels and a microphone is placed remotely from the user near the upper left corner of the windshield. This particular environment causes acoustic variations in the speech signal which do not carry linguistic information. Variations are also caused by different transducers, channels, speaker and noise backgrounds. Col. 1, lines 19 – 27.

Then, in the Detailed Description of the Invention, col. 5, lines 19 – 27, Gong discusses more the speech acoustic models that are trained in a quiet environment and adapted to a testing environment. “Therefore, for training it is not necessary to collect large speech database in the car, which is a costly and unsafe operation.” The calibration phase, a procedure is used that improves recognition “for speakers, microphones and vehicles that are unseen at the training stage.” Col. 5, lines 26 – 28. In no place does Gong suggest or imply that the adaptive speech recognition for automobiles applies in any other context.

In sum, Applicants respectfully submit that Gong’s invention is limited to automobile use. The Abstract states that “the system uses utterances recorded in low noise condition, such as a car engine off to optimally adapt speech acoustic models to transducer and speaker characteristics and uses speech pauses to adjust the adopted models to a changing background noise, such as when in a car with the engine running.” As referenced above, the Background of the Invention focuses the reader’s attention on the automobile context of the application. Gong in no place provides any suggestion that the invention applies outside of this context. These details will be provided in several places below in that the Examiner takes the automobile-based invention of Gong and combines it with various other patents where the only connection is that Gong and the other reference are “analogous art”. Simply because two references are analogous art is not sufficient to establish a prima facie case of obviousness. The MPEP establishes that references combined under section 103 must be analogous prior art but that is only the first step. MPEP 2141.01(a). In other words, the Examiner must first determine that the references are analogous which makes it possible to use them as references available for combination under Section 103. *But*, that does not eliminate the Examiner’s responsibility under the MPEP to articulate the prima facie suggestion and motivation to combine the references. The Examiner in this case has skipped the core part of the obviousness analysis.

Applicants submit that one of skill in the art would not find sufficient motivation or suggestion to combine the automobile-based speech recognition of Gong with Kanevsky. Kanevsky teaches (from its title:) "Speaker model adaptation via network of similar users." The Examiner asserts that it would be obvious to modify Gong with Kanevsky's use of personal computers to expand the amount of speech data available for speech recognition using a personal computer connected to a network to receive speaker data. It is clear from the title and abstract that Kanevsky focuses on networked computers. One of skill in the art would readily understand the differences in acoustic environment between an automobile with a hands-free environment and the context of networked computers.

One basic difference between Kanevsky and Gong is that Gong's acoustic environment relates to the automobile where the microphone is placed away from being near the mouth of the speaker which causes an increase in the mismatch conditions. Col. 1, lines 22-24. Kanevsky makes no reference or suggestion of its principles being applied to vehicles or automobiles. One of skill in the art understands that the differences between the environments of a user in a vehicle with a microphone positioned remotely from the user and the very different acoustic environment which is also in connection with an on-board speech recognition processing system on a vehicle in contrast to the networked environment of Kanevsky where users are sitting at computers. Although both of these references relate to speech recognition generally, Applicants respectfully submit that the preponderance of the evidence does not lead one of skill in the art to find motivation or suggestion to combine Gong with Kanevsky. Accordingly, Applicants submit that claims 5, 6 and 25 are patentable.

Rejection of Claims 7-8 and 26 Under 35 U.S.C. Section 103(a)

The Examiner rejects claims 7-8 and 26 under 35 U.S.C. Section 103(a) as being unpatentable over Gong in view of Hunt et al. (USP 6,094,476) ("Hunt"). Applicants traverse this rejection and submit that there is insufficient motivation to combine Gong with Hunt. As discussed above, Gong is based on an automobile application of speech recognition

with no suggestion that its principles apply elsewhere. Again, Gong's focus is the automobile acoustic environment for speech recognition. In contrast, Hunt focuses on a speech responsive voice messaging system. The Examiner selects small portions of Hunt for features such as a satellite communication system (col. 4, lines 16 – 23) for claims 7 and 26 and col. 11, lines 43 – 47 for a speech recognizer located at a server for claim 8. Applicants respectfully submit that where Gong focuses entirely on an on-board speech recognition system for a "hands-free" operation in a vehicle, that there is no suggestion or motivation to combine this teaching with a satellite system taught in Col. 4 or a speech recognizer located at a server in col. 11.

Furthermore, Hunt makes clear in the Abstract that his system involves transferring a user in the UI from a speech system to a DTMF UI which has performed in response to detected of predetermined DTMF signals while the speech UI is in context. The reason this has applicability to the present issue of combination is that Gong's fundamental operating mode as established in column 1, lines 15 – 34 is the cellular phone "hands-free" environment in the vehicle. Thus, blending Gong's hands-free environment with Hunt's invention which requires a UI with a DTMF touchpad and tactile interaction from the user are incompatible. One of skill in the art would therefore readily recognize that the fundamental operation of one Gong would be violated by the blending of Hunt's technology.

Therefore, claims 7, 8 and 26 are patentable.

Rejection of Claims 11 Under 35 U.S.C. Section 103(a)

The Examiner rejects claim 11 under 35 U.S.C. Section 103(a) as being unpatentable over Gong in view of Cilurzo et al. (USP 6,434,626) ("Cilurzo"), and further in view of Sonmez et al. (USP 5,745,872) ("Sonmez"). Applicants traverse this rejection. Initially, Applicants note that the Examiner's has not carried his initial burden to articulate the prima facie case of obviousness (this applies to each Section 103 rejection). However, Applicants

will provide some arguments regarding the insufficient motivation or suggestion to combine Gong with Cilurzo and Sonmez.

Gong and Sonmez teach contrasting approaches that cannot be blended according to the principles set forth above about when it is legally appropriate to combine references. Sonmez's teaches a system in which a codebook generator is used to compute vector quantization values for a known reference environment and a known secondary environment. The system provides compensation for speech recognition in the second environment using the codebook values. Importantly, Sonmez states that "An object of the present invention is to avoid the need for simultaneous stereo recording by adapting the reference vector quantization codebook to secondary environments." See Col. 2, lines 19 – 31. In other words, rather than recording speech data for the secondary environment, Sonmez teaches using codebook values to compensate the speech recognizer. It is an *object* of Sonmez to "avoid" recording data. Now, Gong teaches that in the automobile context, his approach is to collect utterances in a quite car to provide an initial HMM, (one time adaptation 12, FIG. 1). During quiet moments when the push-to-talk switch is not pressed, Gong teaches "the background noise is recorded and estimated at noise estimation 19". Col. 2, lines 42 – 43.

Accordingly, Applicants submit that Gong teaches an approach of "on-line noise compensation" which involves in step 19 of noise estimation of recording background noise for use in noise compensation. In contrast, Sonmez teaches using a codebook approach for compensation of speech processing. Sonmez articulates that an object of his invention is to "avoid the need for simultaneous stereo recording by adapting the reference vector quantization codebook to secondary environments." These are clearly incompatible approaches wherein to force Gong to be blended with Sonmez, the "proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified." In this case, the teachings of Gong and Sonmez are not sufficient to render

the claims *prima facie* obvious. Therefore, Applicants respectfully submit that claim 11 is patentable.

Rejection of Claims 9 12, 20, 28 and 32 under 35 U.S.C. Section 103(a)

The Examiner rejects claims 9, 12, 20, 28 and 32 under 35 U.S.C. Section 103(a) as being unpatentable over Gong in view of Cilurzo. Applicants traverse this rejection and submit that there is, by a preponderance of the evidence, insufficient motivation or motivation to combine these references. Cilurzo discloses an invention related to a network application of software services. The object of Cilurzo is stated as to provide, on a network, specification application software with a speech recognition capability. Another object is to provide on a network that can be expanded dynamically. Col. 2, lines 46 – 51. As discussed above, Gong focuses on an automobile application with no suggestion or reference to any application outside of speech recognition in a vehicle. Indeed, Cilurzo begins his disclosure with the statement that “the present invention relates to communication networks and more particularly to the provision of a speech recognition capability to special application program services provided on a network.” Col. 1, lines 6 – 9.

Applicants respectfully submit that the Gong is entirely focused on the automobile context of speech recognition in that environment. When the overall teachings and suggestive power of Gong are studied objectively, there is no suggestion or motivation to look to features of a computer network based application of speech recognition capabilities as is found in Cilurzo. Since the standard of proof is only by a preponderance of the evidence, Applicants submit that the scale tips in favor of a lack of sufficient suggestion to combine Gong with Cilurzo. Therefore, claims 9, 12, 20, 28 and 32 are patentable and in condition for allowance.

Rejection of Claim 10 Under 35 U.S.C. Section 103(a)

The Examiner has rejected claim 10 under 35 U.S.C. Section 103(a) as being unpatentable over Gong in view of Heck et al. (USP 5,950,157) ("Heck") and further in view of Cilurzo. Applicants submit that based on the analysis above, that Gong should not be combined with Cilurzo. Accordingly, claim 10 is patentable for the same reasons set forth above.

Rejection of Claim 14 Under 35 U.S.C. Section 103(a)

The Examiner has rejected claim 14 under 35 U.S.C. Section 103(a) as being unpatentable over Gong in view of Hoffberg et al. (USP 5,875,108) ("Hoffberg"). Applicants traverse this rejection. As discussed above, Gong relates to an automobile application of speech recognition. The Examiner combines Hoffberg with Gong because Hoffberg is analogous art since it is in the similar field of speech recognition. Applicants traverse the Examiner's conclusion that Hoffberg is even analogous prior art. "A reference is reasonably pertinent if, even though it may be from a different field from the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in consideration his problem." *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992). Here, the Examiner states that Hoffberg is analogous art because it is in the similar field of speech recognition. However, Hoffberg is an enormous patent (110 pages) and speech recognition is only referenced a few times in passing. Table 1, at columns 7 and 8, references one of many user inputs where voice is used to give speech prompts. Column 80, lines 5 – 36 describe speech recognition in the context of Example 10 (beginning at column 79, line 34), which is for an intelligent adaptive VCP interface. In this portion of Hoffberg, they teach that speech recognition may be used with a VCR for obtaining information and specifically obtaining time information: "If the machine has access to an external source of the exact time, it would then preferably access this source first. Such sources of exact time include a telephone connection to a voice line which repeats the time. The computer would then perform a speech recognition algorithm which would be

sued to determine the time.” Col. 80, lines 5 – 8. Applicants submit the overall teaching of Hoffman (in its 110 pages) relate to graphical user input. Scant mention in the patent is related to speech recognition. Therefore, because of the scant mention of speech recognition in Hoffman, and where in the teaching is related to a user interface for a VCR, Applicants submit that it is not analogous prior art and that Hoffman would not “logically have commended itself to an inventor’s attention in considering this problem.” Therefore, Applicants submit that Hoffman and Gong should not be combined and claim 14 is patentable.

Rejection of Claim 16 Under 35 U.S.C. Section 103(a)

The Examiner has rejected claim 14 under 35 U.S.C. Section 103(a) as being unpatentable over Gong in view of Byers (USP 6,219,645) (“Byers”). Applicants traverse this combination of references. Byers relates to a user walking between microphones. Since Gong as discussed above is related to an automobile application where a user is sitting in a vehicle, in that context a user does not walk around. Therefore, where Byers teaches a system which provides mobility from room to room for a person walking, one of skill in the art would not be motivated to search out the teachings of Byers in view of the teachings of Gong. Therefore, claim 16 is patentable and in condition for allowance.

Rejection of Claim 17 and 30-31 under 35 U.S.C. Section 103(a)

The Examiner has rejected claim 17 and 30-31 under 35 U.S.C. Section 103(a) as being unpatentable over Gong in view of Heck et al. (USP 5,950,157) (“Heck”). Applicants traverse this rejection and submit that there is insufficient motivation to combine these references.

As mentioned above, Gong relates to an automobile hands-free speech recognition application. Gong introduced his hands-free application by noting that in order for the hands-free operation to work, “the microphone is often placed remotely from the user near the upper

left corner of the windshield.” Col. 1, lines 20 – 21. Throughout the disclosure, Gong never changes or suggests a different arrangement than the single microphone positioned next to the left corner of the windshield. In contrast, Heck relates to a method where it is a requirement that different acoustic input devices are contemplated. To begin, Heck’s Abstract explains that there is a “type mismatch between acoustic input devices used during testing and during training in machine-based recognition....” Further, Heck explains that the purpose of his invention is to “maintain robust discrimination even in the presence of mismatch among the types of handsets used to process speech for recognition and for training speech models.” Col. 2, lines 5 – 8. In sum, Heck requires different types of handsets and deals primarily with the mismatch between different types of handsets. In Gong, by contrast, they contemplate a single “handset” (which is not even a handset but a microphone mounted in the car for hands-free operation) that does not change in the acoustic environment. Therefore, Applicants submit that one of skill in the art would not read Gong, learn about its context and scope, and have sufficient motivation or suggestion to combine Gong with Heck. Heck’s fundamental feature is that different types of handsets are being used which is incompatible with Gong’s application.

Therefore, Applicants respectfully submit that under a preponderance of the evidence, that Gong and Heck should not be combined and therefore claims 17 and 30 – 31 are patentable.

CONCLUSION

Having addressed the rejection of claims 1 - 32, Applicants respectfully submit that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

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